**Warm Up NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. According to the Census Bureau, the number of people in a US Household follows the following probability distribution:



1. What is the average # of people in a US household (how many people do you expect to be in the average US household)?
2. What is the probability that if I select a US household, there will be more than 2 people in it?
3. What is the probability that if I select a US household, there will be more than 2 people in it?
4. If I select 10 households at random, how many total people do I **expect** to see?
5. You go to a carnival and decide to play a game. In the game there are 20 boxes in front of you. Each box has a “prize” in it, however some are good prizes, and some are not! You pay $4 to play the game. You are allowed to pick 1 box to open, and you receive the prize in it. The prizes are as follows:

* 2 boxes have $15 in them
* 8 boxes have $4 in them
* 3 boxes have $10 in them
* 1 box has $25 in it
* 6 boxes have nothing in them

1. Create a probability model for the what you GAIN in this game
2. What is the chance that you gain some money?
3. What is the chance that you gain more than $10?
4. What is the chance you gain less than $5?
5. What is your expected winning on one play of the game?
6. What is your expected winning on 30 plays of the game?

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